Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	CC Docket No. 94-102
Revision of the Commission's Rules	)	RM-8143
To Ensure Compatibility With	)	
Enhanced 911 Emergency Calling Systems	)	

REPLY COMMENTS OF CENTURY CELLUNET, INC.

Century Cellunet, Inc. ("Century") herewith submits its reply to comments on the above-captioned Notice of Proposed Rulemaking.[1] Century strongly supports the Commission's goal of achieving wireless/E911 compatibility. As discussed herein, however, Century cannot, for a variety of practical and technical reasons, support the framework proposed in the *Notice* for achieving such compatibility. Instead, Century urges the Commission to allow the existing industry process, which joins wireless carriers, manufacturers, landline carriers, and the affected public safety organizations, to continue their efforts to develop a reliable, consensus approach to wireless/E911 compatibility.

The *Notice* proposes regulations "to ensure broad availability of 911 and enhanced 911 services to users of the public switched telephone network (PSTN) whose health and safety may depend on 911 emergency services systems."[2] To this end, the *Notice* "would require commercial mobile radio services . . . to include features that will make enhanced

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[1] Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, 9 FCC Rcd 6170 (1994) ["*Notice*"].

[2] *Notice*, 9 FCC Rcd at 6170.

911 services available to mobile radio callers."[3] More specifically, the *Notice* proposes rules that require wireless systems to be compatible with, among other things, the Station Number Identification, Automatic Location Information ("ALI"), and Selective Routing features of E911.

While Century supports the Commission's ultimate goal of enhancing the capabilities of 911 access services provided by wireless carriers, it must oppose the proposed compliance framework. As noted by numerous commenters, many of the proposals appear to be premature or based upon fundamental technical misconceptions.[4] Century's comments on specific proposals are as follows:

E911 Implementation Requires a Systemic Solution. Century agrees with the comments stating that wireless/E911 compatibility is a highly complex issue that requires a systemic solution. Many of the E911 capabilities sought by the Commission require modifications not only to handsets or cell sites, but also to mobile switching centers, landline interconnection arrangements, landline network switching systems, and PSAP interfaces.[5] These systems cannot be individually modified without considering the overall network, which means that new standards must be developed and existing standards modified to avoid

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[3] *Id.* at 6171.

[4] Century also believes that there are other issues, such as liability, that must be examined prior to requiring E911 implementation. *See* Ameritech at 8; AT&T at 26, 40-41; Bell Atlantic at 11; BellSouth at 20; CTIA at 20-21; Nextel at 9; PCIA at 27-28; Southwestern Bell at 24-25.

[5] *See, e.g.*, Ameritech at 5; AT&T at 23-24; BellSouth at 11-13; Nextel at 5-6; PCIA at 17-18.

incompatibility.[6] Wireless/E911 compatibility must be addressed by the whole industry jointly, and attempting to mandate specific requirements prior to consensus resolution of basic interface issues is entirely premature.[7]

In Light of Ongoing Industry Efforts, Regulatory Intervention Is Not Currently Warranted. As a threshold matter, Century does not believe that governmental intervention is warranted or justified at this time. Although the Commission states its belief that "it appears doubtful that enhanced 911 interface capability will be implemented voluntarily [by wireless carriers]," the cellular industry has made great strides in ensuring reliable, functional 911 access.[8] Century, for example, voluntarily provides access to 911 services in all of its cellular markets to all mobile callers, whether they are subscribers or not. As the Commission itself notes, PCIA and wireless carriers also have been participating in industry forums with public safety organizations to develop a consensus solution to address wireless/E911 compatibility. Under the circumstances, a more appropriate role for the FCC would be to monitor ongoing industry processes and intervene only if necessary.[9]

Wireless/E911 Compatibility Should Be Deferred Until an Equitable Cost Recovery Mechanism Is Developed. In light of the existing mechanisms for local exchange carriers to recover 100 percent of their E911 implementation costs and monthly costs in the landline

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[6] *See, e.g.*, AT&T at 24; BellSouth at 11-13; CTIA at 17-18; King County Enhanced 911 System at 2; PCIA at 3-4; Southwestern Bell at 7-9.

[7] *See* ALLTEL at 1-2; Bell Atlantic at 8-9; Kentucky Emergency Number Association at 1-2; PCIA at 3-4; Southwestern Bell at 7-9; U S West at 22.

[8] *See, e.g.*, Southwestern Bell at 1-2.

[9] *See* ALLTEL at 5-6; Ameritech at 7; Nextel at 7; U S West at 10.

context, Century believes that it would be appropriate for the FCC to consider mechanisms for more equitably distributing the costs of wireless/E911 compatibility. Cellular carriers should not be required to shoulder the burden. The system modifications necessary to implement wireless/E911 compatibility, if technically possible, will be exceedingly expensive. In the landline environment, and supported by state legislation, the cost of E911 should be borne by the public not the carriers. Century urges the Commission to consider mechanisms that would recover the costs of complying with any compatibility mandate in a rational and competitively neutral manner.[10]

Wireless/E911 Compatibility Should Not Be Required In Areas Where Enhanced Features Cannot Be Used. If the Commission persists in mandating a schedule for wireless/E911 compatibility, Century agrees with commenters advocating that such requirements only apply in area where a wireless carrier has received a *bona fide* request for E911 services from a public safety organization that has itself scheduled the necessary PSAP changes to be E911-compatible. As commenters have noted, there are many areas of the country where E911 capabilities are not presently supported by the landline infrastructure or the public safety organizations responsible for responding to 911 calls.[11] Forcing all wireless carriers to ensure wireless/E911 compatibility in those areas makes little policy sense, as it imposes significant costs without any commensurate benefits.[12]

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[10] *See* Ameritech at 7; AT&T at 42-43; Bell Atlantic at 12; BellSouth at 20-21; GTE at 31-32; Nextel at 7; Northern Telecom at 62; Pacific Bell at 3; PCIA at 28; Rural Cellular Association at 9; U S West at 23-25.

[11] *See* CTIA at 10; Southwestern Bell at 5-6; U S West at 12-13.

[12] *See, e.g.*, ALLTEL at 3-4; CTIA at 18-20; Southwestern Bell at 5-7; U S West at 13, 21-23.

Mobile Callers Should Be Required To Press the <Send> Key To Activate Emergency Dialing. Century concurs with the majority of commenters that requiring mobile users to press the <send> key after dialing the 9-1-1 sequence to access emergency services is not unreasonable.[13] As commenters have pointed out, mobile users are familiar with the need to press the <send> key to initiate a call, and altering the requirements for 911 calls may precipitate confusion.[14]

911 Access Requirements Should Only Apply to Activated Mobile Phones. Century agrees with the overwhelming consensus in the record that 911 access requirements only should apply to activated mobile phones.[15] Mobile users are highly unlikely to rely on a deactivated mobile phone in an emergency situation. Under the circumstances, any extension of the 911 access requirements to deactivated phones would be contrary to the public interest.

The Phase I ALI Requirements Should Recognize the Limitations of Radio Systems. The Commission must recognize the limitations of wireless systems if it mandates a compliance schedule for ALI. Under the proposed implementation schedule, cellular carriers will be unable to comply with the current Phase I requirements because they cannot guarantee, or even reliably predict, whether a cellular caller is within some geographic area associated with a cell that it is serving the caller. While 32 dBu (or other) contours are an

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[13] *See, e.g.*, APCO at 36; AT&T at 24-25; Bell Atlantic at 8; Ericsson at 3; Northern Telecom at 48; Southwestern Bell at 9; Smith at 15.

[14] *See* Ericsson at 3.

[15] APCO at 36; AT&T at 25; Bell Atlantic at 8; BellSouth at 13-14; CTIA at 12-13; GTE at 12-13; Northern Telecom at 49; Pacific Bell at 3; PCIA at 5-8; Rural Cellular Association at 3-4; Terrapin at 4.

administratively convenient representation of a cell's serving area, a cell will often serve a caller outside of the contour due to terrain features not considered in the propagation model, shielding by obstructions, cell overloading, the height of the transmitting mobile unit, and other propagation anomalies.[16] Because there is no reliable relationship between location and serving cell, Century questions whether the information delivered by carriers under Phase I will even be useful to public safety entities.

Reliable Phase II ALI Systems Do Not Appear To Be Available. The Commission should recognize that the technology to implement accurate, reliable two-dimensional location determination under Phase II does not appear to exist. Existing cellular networks do engage in some limited signal power level measurements to determine an appropriate serving cell. The utility of such measurements as a technique for determining precise location, however, is questionable. As commenters have observed, if a cellular caller moves just a few feet, there can be vast changes in the power level of the signal received by one or more base stations. As a result, attempting to calculate a caller's location by triangulating existing signals is virtually hopeless.[17] Furthermore, Century does not know of any modifications that could feasibly be made to base stations, handsets, and switching equipment to implement an accurate system of triangulation.

The Transition From Phase II to Phase III ALI Should Be Evolutionary. Century expresses grave reservations about mandating a transition framework for ALI until the

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[16] *See, e.g.*, AT&T at 30; Ericsson at 6-7; GTE at 16-18; PCIA at 12-13; Southwestern Bell at 14-16.

[17] *See, e.g.*, ALLTEL at 3; Elert at 2-3; Ericsson at 7-8; GTE at 18-20; Pacific Bell at 5; Southwestern Bell at 16-17.

possible technologies are better understood. Specifically, Century believes it is critical to develop a framework where there is a logical progression from the technology deployed to meet Phase II location requirements to the systems that will eventually provide Phase III location information.[18] The *Notice* proposals, however, do not meet this requirement and require cellular carriers to undertake an expensive upgrade to meet Phase II requirements that will almost immediately be scrapped under Phase III in favor of yet another expensive -- and potentially incompatible -- upgrade. Instead of increasing the accessibility of 911, the costs imposed on wireless systems may, under the current proposal, drive users away from wireless devices and ultimately restrict access to 911 services.

Phase III ALI Technology Will Not Be Available Within the Compliance Schedule Proposed. In the face of substantial evidence that the technology needed to implement Phase III ALI does not exist,[19] mandating any requirements to provide three-dimensional positioning appears premature. Although the Commission (and a few commenters advocating their own proprietary technologies) have suggested that there are means for obtaining three-dimensional positioning, the proposed technologies all suffer from debilitating defects. GPS, which appears to be the most promising technology, will not work in urbanized areas where the likelihood of a mobile user having line-of-sight to four satellites is unlikely.[20] GPS will also raise handset costs exorbitantly, will require a horizontal patch antenna that is

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[18] *See, e.g.*, AT&T at 30; Bell Atlantic at 10-11; BellSouth at 11-13; CTIA at 10-11; Northern Telecom at 56; PCIA at 14-15.

[19] *See* ALLTEL at 3; Ameritech at 8; AT&T at 32-35; BellSouth at 14016; CTIA at 9-10; Pacific Bell at 5-6; PCIA at 2-3; Southwestern Bell at 17-19; U S West at 2-9.

[20] *See, e.g.*, AT&T at 33; CTIA at 9-10; Elert at 10; Redcom at 16; Siemens at 5.

incompatible with portable uses, and will take too long to "fix" on a user's position.[21] Furthermore, inertial systems designed to interpolate and provide rapid location information between satellite fixes appear to be incompatible with the "sleep timers" in handsets used to provide acceptable battery performance and require inputs (velocity, direction) that are not available in pedestrian applications.[22] Without assurances that a feasible technology exists that is not cost-prohibitive and is compatible with the full range of mobile and portable operating constraints, adopting the Phase III requirements is not sound public policy.

Absolute Call Priority for 911 Calls May Not Be Appropriate. Century does not believe that absolute call priority for 911 calls is necessarily desirable. As commenters have noted, emergencies that precipitate 911 calls from mobile users are often called in by more than one party. Because many cells are limited to only a few channels, providing absolute priority for E911 calls may result in locking out all other traffic, including calls that are emergency-related but not made to 911.[23] Indeed, inasmuch as the Commission has encouraged private radio users to satisfy their needs for additional spectrum by using non-private radio systems,[24] blocked out channels may actually be needed by emergency response personnel.

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[21] *See, e.g.*, Elert at 10; Ericsson at 9; Southwestern Bell at 18; U S West at 16 n.20, 18; Vanguard at 20.

[22] *See, e.g.*, AT&T at 36; CTIA at 7-8.

[23] *See, e.g.*, ALLTEL at 2; AT&T at 26; BellSouth at 18-19; CTIA at 13-14; PCIA at 9-11; Secretary of Defense at 3-5.

[24] *See, e.g.*, Allocation of Spectrum Below 5 GHz Transferred from Federal Government Use, ET Docket No. 94-32, FCC 95-47 (Feb. 17, 1995) at ¶ 22.

In conclusion, while Century supports wireless/E911 compatibility measures, Century opposes the specific transition framework proposed in the *Notice*. For a variety of practical and technical reasons, the implementation proposals in the *Notice* will not serve the public interest. Instead, Century urges the Commission to allow the mobile radio industry, in conjunction with landline carriers, manufacturers, and the affected public safety organizations, to continue their progress on E911 implementation free of regulatory intervention.

Respectfully submitted,

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